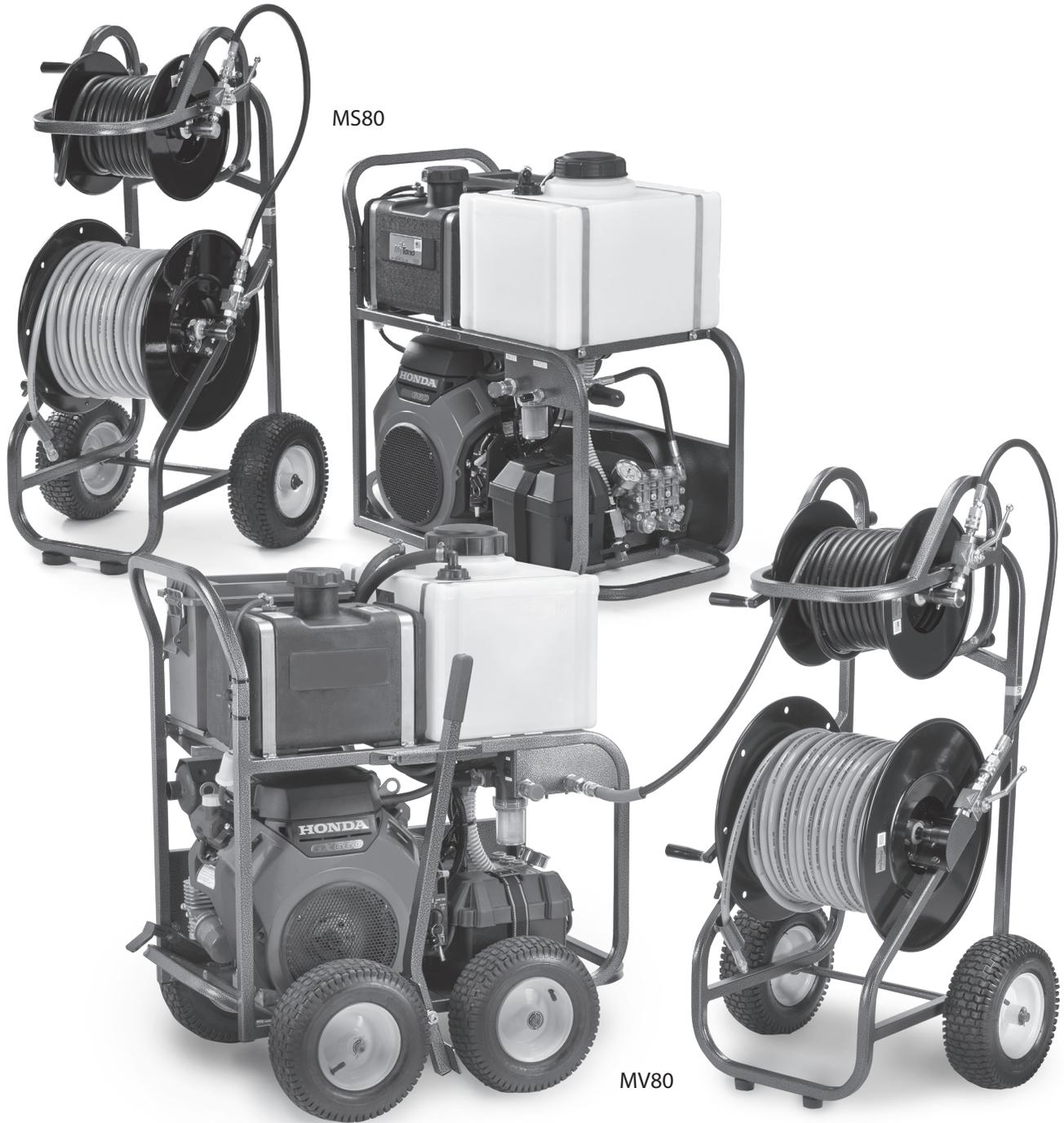




User Guide for MV80 and MS80 Jetters



MS80

MV80

113021

**Manufacturers of Quality
Sewer & Drain Cleaning
Equipment since 1957**

www.MyTana.com

746 Selby Ave • St. Paul, MN 55104
fax: (651) 222-1739

(800) 328-8170

Factory Direct Customer Service
M-F 7am – 5pm CST
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-IMPORTANT NOTICE-

FOR YOUR SAFETY, AND TO ENABLE MAXIMUM USE AND EFFECTIVENESS OF YOUR EQUIPMENT, READ (AND UNDERSTAND) THIS INSTRUCTION MANUAL ENTIRELY BEFORE USING YOUR HIGH-PRESSURE WATER JETTING UNIT!

FAILURE TO FOLLOW INSTRUCTIONS AND REGULATIONS CONTAINED IN THIS MANUAL CAN RESULT IN SERIOUS INJURY TO THE OPERATOR AND/OR TO ANYONE IN CLOSE PROXIMITY TO THE WORK AREA.

The Jetting Process

Water Jetting—also known as sewer jetting or hydro-jetting—uses a combination of water pressure (psi) and water flow (gpm) through a hose and nozzle to flush debris out of drain and/or sewer lines.

Water jetting is used to penetrate and wash out clogs or ice, potential blockages or to simply clean the walls of drains and sewer lines to prevent future blockages.

- ▶ Sewer jetting differs from **normal pressure washing**:
 - Sewer jet nozzles direct the flow of water back toward the operator at a 20 to 45 degree angle. This backward stream propels the sewer nozzle and accompanying hose forward into the sewer line and also cleans the walls of the pipe.
 - Jetting pumps deliver more flow and controlled pressure to clear tough blockages.
 - Water pumps on sewer jetting equipment are modified to allow pulsation of water through the hose to the nozzle. This pulsation creates a vibration or “wiggle” in the jetting hose that allows the hose to move through a drain or sewer line with little resistance. Pulsating also reduces pressure and/or flow of the water, so most pumps are equipped to turn pulsation on and off at will.
- ▶ **Components of water jet machines:** Water pump; hose reel; various sub-components that protect the pump and the operator; various nozzles for various cleaning applications and situations. Larger jetters use a water storage tank for additional water supply.



MyTana stocks replacement parts for our jetters.
Many are available to purchase online at mytana.com/jetter-parts

! Safety First! Instructions and Precautions

Pumps

- Remove “shipping” plug on top side of pumps and replace with vented plug. This is very important for the proper operation of the pumps.
- Do not store or run the pumps on its side or at a sharp angle, since oil can run out of the vent plug.



Vented Plug

Environment

- Use caution in confined, wet areas. Drain cleaning professionals often work directly through non-trapped openings into sewers — make sure that there is adequate ventilation into the work area.
- Neutralize or remove corrosive drain cleaners from drain before starting.
- Do not operate machine in areas where combustible gases, liquids or dust are present. Fire or explosion may occur.

Keep bystanders or unauthorized persons away

Insist they keep a safe distance before operating high pressure equipment.

- Never hold on to nozzle or point it at anyone with machine turned on. High pressure water streams can cause serious bodily harm.

Always insert hose at least 3' - 4' into pipe opening and hold onto hose before turning the machine on.

Shut the machine down:

- When changing nozzles, hose or reels.
- Before disconnecting water supply. Running a water pump “dry” will seriously damage the water pump.
- If it will be unattended.
- If machine fails to run properly.

► Read Shut Down instructions on pg 7.

Common Sense Don't operate equipment while smoking, under the influence of drugs, alcohol or if taking medication that alters alertness.

Keep all labels, decals, warnings, cautions, and instructions with machine. For new decals or labels contact Mytana.

- NEVER spray flammable liquids or toxic chemicals (such as insecticide or weed killer)
- NEVER run acids or hard caustics (such as lye) through the pump. (Only water!)
- NEVER use chemicals or agents that are not compatible with the Buna-N and PVC (polyvinyl chloride) or neoprene covering of the hose.
- NEVER clean the machine using its own spray. The machine is water-protected, but not water proof. High-pressure spray could damage machine components.

Gas Jetters

- Operate machine in well ventilated environment. Exhaust fumes can be potentially lethal to the operator.
- DO NOT allow flame or sparks in the area of operation.
- DO NOT refuel engine when it is running or hot. Spilled gasoline or gas vapor can ignite if it comes in contact with hot engine.
- Be careful not to touch engine block or the manifold/muffler during operation. These areas will become very hot during normal operation.
- DO NOT operate the machine with the air cleaner cover removed, this can cause a fire.
- DO NOT lay jetter unit on its side or tilt it backwards more than 30° when transporting. This can cause gas to leak out the cap vent.
 - **DO NOT fill the gas tank all the way.** Leave several inches of space between the gas and the top of the tank to prevent gas from leaking out when transporting.

Use of diesel fuel in the gas tank may damage the engine. In case of fuel spill use a cloth to clean up the spilled fuel and move the machine to another area until all vapors have cleared.

Gas jetters that are ordered with an electric starter package will have a battery attached. Batteries contain sulfuric acid. Avoid direct skin contact. Wear protective gloves, clothing and eyewear when handling your battery!

Maintenance

- Keep machine clean and dry to maximize performance and longevity.
- Follow maintenance schedules such as changing oil, check for weak spots, slices or cuts in hose, keep inlet screen clean, replace nozzles when worn.
- Keep antifreeze in hose and pump in freezing temperatures.
- Additional maintenance details follow in this manual.

MS / MV80 Components

Hoses and Nozzles

Your jetter works via the proper blend of water pressure and water volume: the more water that has to pass through the restriction of a hose, the less pressure you will have at the nozzle end.

To optimize cleaning power, use the shortest hose with the largest inside diameter that you can. Pressure is lost as the water travels down the length of the hose. As the length increases, the pressure decreases. In addition, the smaller the diameter of the hose, the greater of loss of pressure per foot will be. The MS and MV80 jetters are optimized for 250' of 3/8" hose.

The orifices (holes) in the nozzle affect pressure. Over time, water pressure will wear the orifices in your nozzle resulting in pressure drop and reduced cleaning effectiveness. Nozzles need to be replaced as normal wear occurs.

When using new hose, run water through it to clean it out before attaching the nozzle.

Pumps

Periodically change oil in pumps.

- Change oil after first 30 hours of use for "break-in"
- After that, change every six months or at approximately 250 hours of use
- Recommended oil: General Pump (GP) Brand SAE 30W Non-detergent

Do NOT run pump without water in it. This can damage the cylinder walls, warp or crack the pump casing.

Do not use water more than 145°. This will damage seals. Your pump is equipped with a thermal relief valve. However, to optimize pump protection you should still avoid water (or any pumped fluid) that is too hot on the inlet side.

NEVER run pump if there is ice in pump or outlet hose. See Care Tips section on page 7 for antifreeze procedure.

- ▶ If the jetting unit will be unused for a period of time (more than several days), even in warm temperatures, we recommend running antifreeze through pump and hose before storage. Antifreeze greatly reduces the chance of rust, mineral deposits and other contaminants damaging the pump during storage.

Additional Components

Water Inlet and Filter

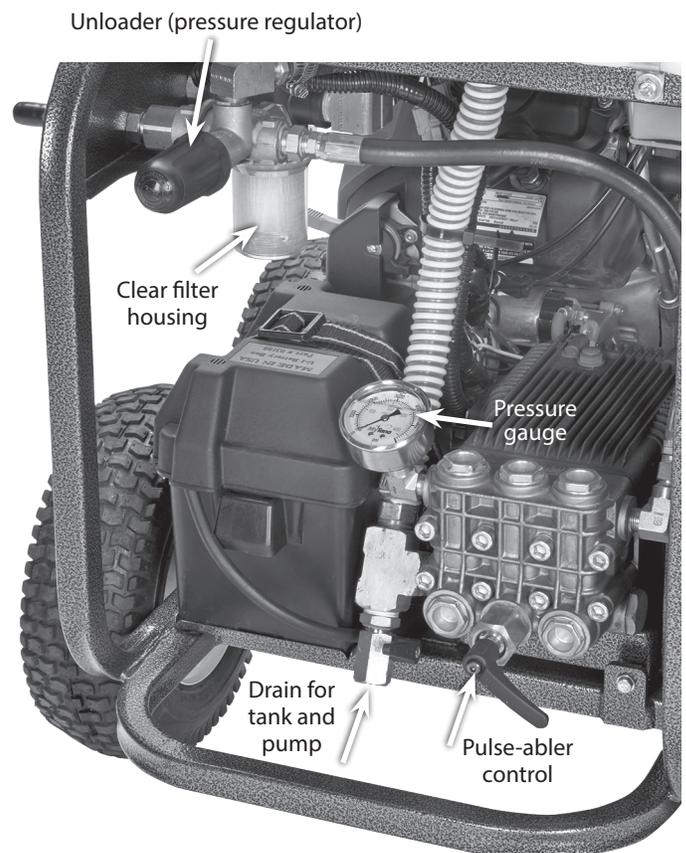
Before attaching source hose to the jetter, run water through the source hose to flush debris out of the faucet and hose. Make sure the water is running clean and clear.

The water inlet has a filter to prevent small debris from running through your pump. However **recheck the inlet filter before each use** to make sure there is no obstruction.

Thermal Relief Valve

As stated earlier, water temperatures in excess of 145° can damage the pump seals. The thermal relief valve will release the hot water and allow cool water to enter pump from fresh water supply. The valve also provides protection when the pump goes into "bypass" meaning the pump is running but no water is being pushed through the hose.

This happens automatically, and the valve will reset. If the relief valves kicks in often, it most likely is failing, and should be replaced, see MyTana.com/jetter-parts.



Pressure Regulator/Unloader

The regulator/unloader both regulates the pressure and relieves pressure on the pump while in bypass.

The Regulator knob is located at the pump. It allows you to adjust pressure during operation. Set the engine throttle to a constant motor speed before adjusting pressure regulator, lower rpm equals lower pressure at the pump, while high rpm delivers higher pressure.

The Unloader prevents pressure overload in the event that the nozzle is plugged or the ball valve is shut off. When in the by-pass mode, the pump will continue to run.

- ▶ Avoid running in by-pass mode for more than 2 minutes if the by-pass is not returning to the float tank. It can damage the pump.

Pressure Gauge

The gauge reflects pressure from the pump only, not pressure at the end of the hose. It is important to select the

largest possible hose size in order to have as much pressure as possible at the end of the hose.

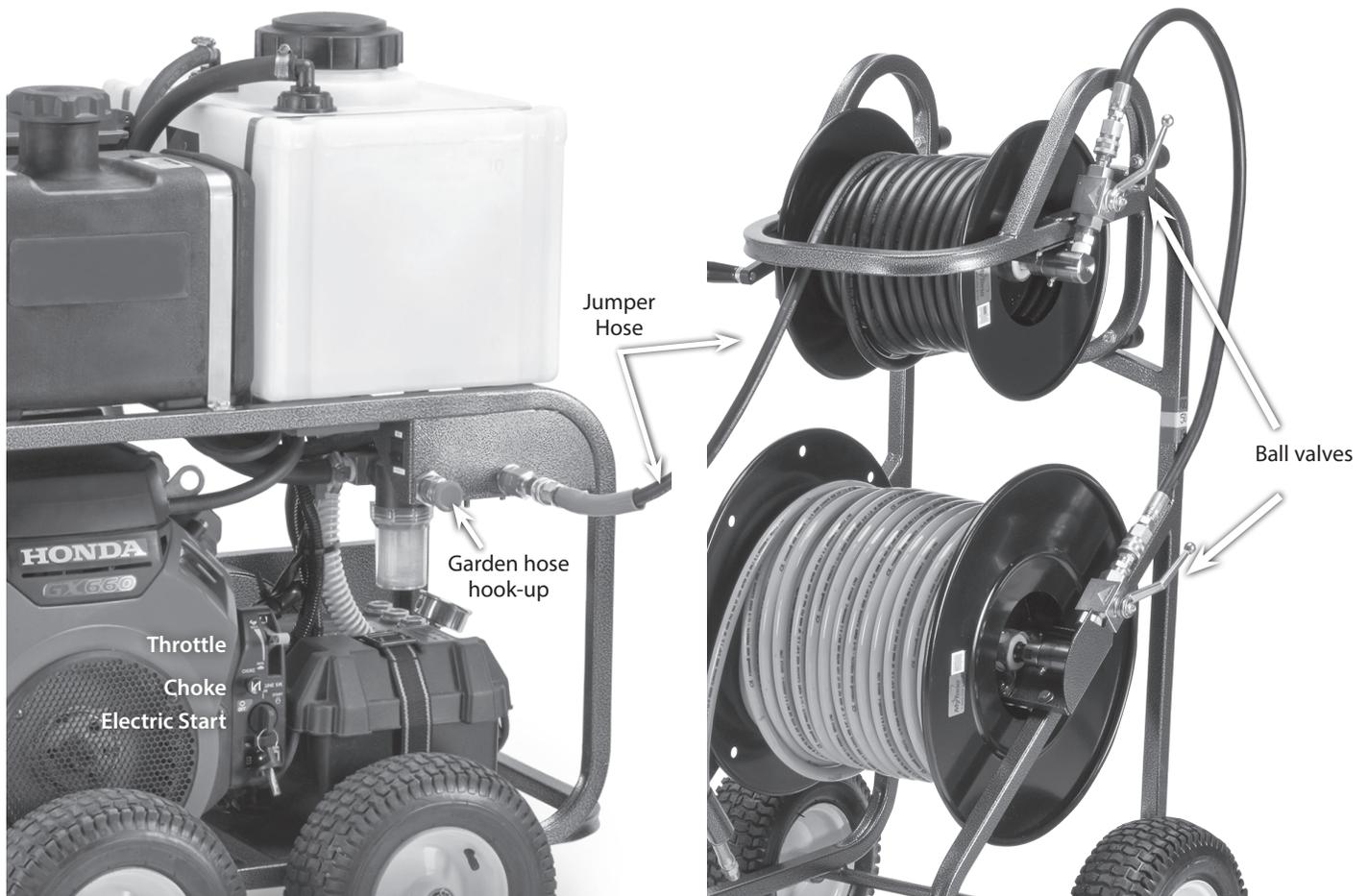
Hoses of the same diameter may be coupled together but it is not recommended for use in lines smaller than 8" diameter. The solid metal of the combined hose connectors and coupling, can get caught in bends in the line.

Pulse-abler

The stem and handle extending from one cylinder of the water pump enables pulsation of the water stream through the hose and nozzle.

By turning the pulse-abler handle clockwise (or right), you temporarily disable one valve of the pump. This creates pulsation or vibration in the hose, allowing the hose to "wiggle" through tight bends quickly and easily. Turn the pulse-abler control left to stop pulsation.

- ▶ Use pulsation only as needed to arrive at an obstruction or to retrieve a stuck hose. See more in Care Tips section, page 7.



Pre Operation Checklist

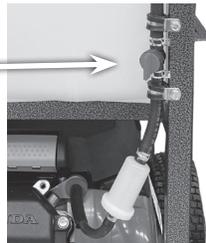
- Be sure you understand all safety precautions (pg 3) and have been trained to use the machine.
- Locate jetter on level surface where water won't pool, engage brake
- Check fluid levels—oil in pumps, oil and gas in gas motor
- Check for adequate water flow—supply hose should deliver at least 8 gallons/minute.
- Check hose for wear or kinks, that all hoses and lines are clear and that inlet filter is clean
- Select nozzle and make sure orifices are not blocked or worn to excess.
- Check that hose reel and all connections are tight
- Wear protective clothing: gloves, rubber boots and goggles or face shield to protect your eyes from spray.

Operation Instructions

1. Attach garden hose to water faucet. Check that flow rate with your supply hose is at least 8 gal/minute. Run water to clear air and flush debris out of faucet and hose before connecting to pump. Shut water off again when water runs clear.
2. Attach other end (male end) of garden hose to water inlet valve at pump.
3. Connect jetter hose to reel.
4. Attach nozzle to end of hose. Finger tighten, do not over tighten.
5. Mark the hose approximately 10ft back from nozzle with electrical tape. Use this tape as your signal to shut off machine before retrieving all the hose out of the drain when you are finished.
6. Open water intake.
7. Open water faucet again to prime pump. An equal amount of water should pass through the orifices of the nozzle.
8. Push jetter hose into drain up to the marker if possible, or minimally 3 to 4 feet.
9. Start Motor/Engine

Remote Jetting Set Up

- Do steps 1-5
- Position the pressure hose and reel at the drain site.
- Connect the 50' jumper hose between jetter and the inlet on the hose reel.
- Open the ball valve on the reel.
- Continue from step #6



- Turn the fuel valve to the “open” position
- Pull out the choke lever. **Do not** use choke if engine is warm or ambient air temperature is high.
- Make sure the throttle is approximately halfway between “MIN” and “MAX”
- Turn key to “start” and start engine
- Push choke lever in
- Move throttle to desired speed

10. Adjust pressure with pressure regulator knob, turning right to increase pressure, left to decrease.

- ▶ **NOTE:** For normal operation, do not exceed the recommended 3000 psi with the 3/8” hose.

As the engine starts, the hose will start to advance down the drain line. Pull the jet hose from the reel and guide it into the line. After it advances a few feet, pull the hose back 1/2 way. The actual cleaning of the line takes place when the hose is pulled back. Repeat the forward/back process.

Helpful Operating Hints

- Tight bends and certain blockages are often more easily negotiated by rotating or twisting jetter hose at drain opening. Form a loop of hose then rotate the loop 90° to 180° until the hose advances. If the hose still fails to advance, switch to a smaller diameter hose
- Once you are through that area, pull back and pass through several times to ensure cleaning.
- Any time you open a blockage(s), pull hose back very slowly to provide maximum cleaning to wall of pipe.
- Use pulsation only if needed to promote forward motion of nozzle and hose.
- When operating from the high end to low end (most common) briefly shut off the water flow ball valve on the reel occasionally. This will allow debris to get ahead of the nozzle and flush it down the pipe. It is best to clean the line several times to ensure all debris is removed
- **Grease and Ice Blockages** High-pressure water can be used to clear an ice blockage. A 3,000 PSI gas jet can clear a 4” line at an approximate rate of one foot per minute depending on the ice blockage. Ambient air temperature will affect these times. Use a nozzle with a forward jet. Warm water is effective in cleaning grease and ice blockages as well. A cold-hot mix from the tap is adequate. However, do not exceed 145° F, it can damage seals in your pump.

Shutting Down

1. When completing pass through drain, watch for tape marker on hose as you pull the hose out.
2. Reduce pressure gradually with pressure regulator knob until pressure gauge is at zero.
3. Stop the jetter motor/engine
 - Move throttle lever down to MIN setting (slowest setting)
 - Turn the key to the "off" position
 - Turn the fuel valve to the "off" position
4. Close water faucet and disconnect garden hose from spigot.
5. Close ball valve. Disconnect garden hose from jetter.
6. Pull remaining jetter hose from drain line.
7. Remove nozzle if you chose.
8. Store jetter hose properly on reel or in a coil to avoid damage to hose.

Do not shut off water flow with ball valve until the pressure is reduced to zero. If the ball valve on the reel is shut off under pressure, it can create a pressure lock and will be hard to turn the valve on for the next job.

Care Tips

Never let pump run dry!! Pump cavitation can occur in only a few seconds of running dry.

Avoid running anything abrasive through pump Abrasive materials will damage pump components, resulting in total malfunction or, minimally, loss of pressure capability.

Keep jetter hose away from sharp edges and muffler

- The hot muffler can damage the coating on the hose making it prone to bursting
- Sharp edges can scrape, slice and generally damage hose quickly. While hose is easily replaced, it pays to take care by buffering sharp edges with tape, cardboard, etc., to maximize its useful life. MyTana has a TigerTail that helps protect your hose, see MyTana.com

Do not use Pulse-abler more than necessary This device is what enables high-pressure cleaning through multiple turns in sink and sewer lines. However, pulsing also creates extreme vibration and faster wear on the pump. So, use as needed, but do not use if a blockage or sewer line configuration does not require it.

Anti Freeze Procedure If you know there will be a period of several days when the jetter will be idle OR if the jetter is stored in potentially freezing weather, make sure to run antifreeze into pump and hose as part of your shut down procedure. Simply insert a short length of garden hose into a gallon of antifreeze, turn on pump and run until you see antifreeze coming out of the nozzle end of the hose. At next use of jetter, you can recover most of that antifreeze when you hook up to your water source. Antifreeze can be used multiple times. However if it gets to diluted (more than 50% water) or if there is any discoloration, discard that antifreeze and replace with new.

Maintenance

Regular inspection is the key to preventing breakdowns and prolonging the life of the equipment. Follow this maintenance schedule at the stated intervals to maximize the life of your jetting equipment. SHUT OFF GAS ENGINE BEFORE ATTEMPTING ANY REPAIRS OR MAINTENANCE.

Inspect and check for:	Frequency
Leaks in discharge or inlet fitting and hose	Daily
Adequate water supply to the pump	Daily
Jet nozzles are not clogged or worn	Daily
Pump oil level, fuel level engine oil level	Daily
PRESSURE HOSE for wear and damage.	Daily
INLET FILTER, and FUEL FILTER for dirt and sediment.	Daily
AIR CLEANER for dirt	Weekly

Service item:	Frequency
Pump Crankcase Oil Change*	1st mo. or 50 hrs. then every yr. or 500 hrs.
Engine Oil Change***	1st mo. or 20 hrs. Every 6 mo. or 100 hrs.
Air Filter Cleaning	1st mo. or 50 hrs. Every 3 mo. or 50 hrs.
Fuel Filter Change	Every 6 mo. or 100 hrs.
Spark Plug Change	Every 6 mo. or 100 hrs.

* Use SAE 30W Non-Detergent Motor Oil to full mark on dipstick or to dot on sight glass.

*** Refer to engine manufacturer's specifications for correct oil viscosity when adding engine oil.

Troubleshooting

!!Warning!! Before attempting any repairs or maintenance, make sure machine is shut off. For electric start units, disconnect battery cables. Severe injury can occur due to electrical shock.

	CAUSE	REPAIR
Pump Malfunction And Pressure Delivery Problems		
Low Pressure	Worn or oversized nozzle	Replace worn nozzle Check nozzle size
	Clogged water and/or chemical inlet strainer	Clean or replace strainers
	Worn or damaged plunger seals	Replace plunger seals
	Worn or damaged inlet or discharge valve	Replace worn valve poppets or valve springs
	Dirt or foreign particles in valve assembly	Remove any dirt or particles
	Air leak in inlet plumbing or discharge	Locate air leak. Reseal connection or replace damaged port
Rough operation with loss of pressure	Restricted inlet plumbing, or air leak in inlet plumbing	Repair clogged inlet fittings. Check supply hose and ensure adequate water supply
	Damaged plunger seal or pump valve	Replace any damaged pump parts and clean out any foreign particles
	Clogged nozzles	Clean or replace nozzles
Water leakage at intake manifold or crankcase	Worn manifold seals, plungers, O-rings or condensation inside crankcase	Replace seals, sleeves, or O-rings. Change oil at regular interval
	Inadequate water supply to pump creating a vacuum lock	Ensure adequate tap water supply; clear inlet filter
Oil leaks	Worn pistons and/or leaking crank seals, crankcase cover seal or drain plug seal	Replace seals, sleeves or O-rings
Excessive wear	Worn and loose bearings	Replace bearings. Check bearing seals, spacers, and retainers. Replace any worn parts.
Short plunger seal	Abrasive particles in fluid being pumped	Replace water and chemical strainers if damaged or missing. Install additional filter if fine abrasives are still evident
	Operator(s) running pump without water supply	DO NOT ALLOW UNIT TO RUN WITHOUT ADEQUATE WATER SUPPLY
	Hot water in pump	Do not run in bypass for more than 2 min. Do not let water supply exceed 145° F
Irregular Spray pattern	Worn or partially clogged nozzle	Clean or replace nozzle
Unloader Valve Malfunction		
Unloader cycles	Fitting leaking downstream	Tighten/replace fitting
	Clogged nozzle	Clean or replace
Fluid leaking from body	O-ring worn or cut	Replace part as necessary
Unloader will not turn up to pressure	Foreign particle in valve	Replace or clean
	Nozzle worn or sized incorrectly	Replace part as necessary
	Plunger or valve worn	Replace part as necessary
Extreme pressure spikes	Adjusting nut turned completely into unloader	Loosen adjusting nut
	Clogged nozzle	Clean or replace